

FIG. 1

**PageTableSetup:**

Physical Address  $\leftarrow$  a

Total ID mapped region size  $\leftarrow$  4MB

X  $\leftarrow$  start address of ID Mapped space

For i  $\leftarrow$  0 to i  $\leftarrow$  number of pages     // size determines total number of identity mapped pages reserved //

    If Physical Address  $\geq$  X and Physical Address  $\leq$  X + size then  
    Virtual Address = X             // Special case to handle identity mapped space //

    Else

        Virtual Address = f(X)         // assuming f(x) is the mapping function used under normal circumstances //

Next i

// regular page table setup continues //

**ImMalloc(size):**

Outcome  $\leftarrow$  malloc (X, X + Total ID mapped region size, allocatesize)

If Outcome = Failure then

    Try to grow ID Mapped space depending upon maximum allowable limit

    If not able to grow the space

        Outcome  $\leftarrow$  NULL

    else

        Outcome  $\leftarrow$  malloc(X, X + New total ID mapped region size, allocatesize)

Return (Outcome)

FIG. 2

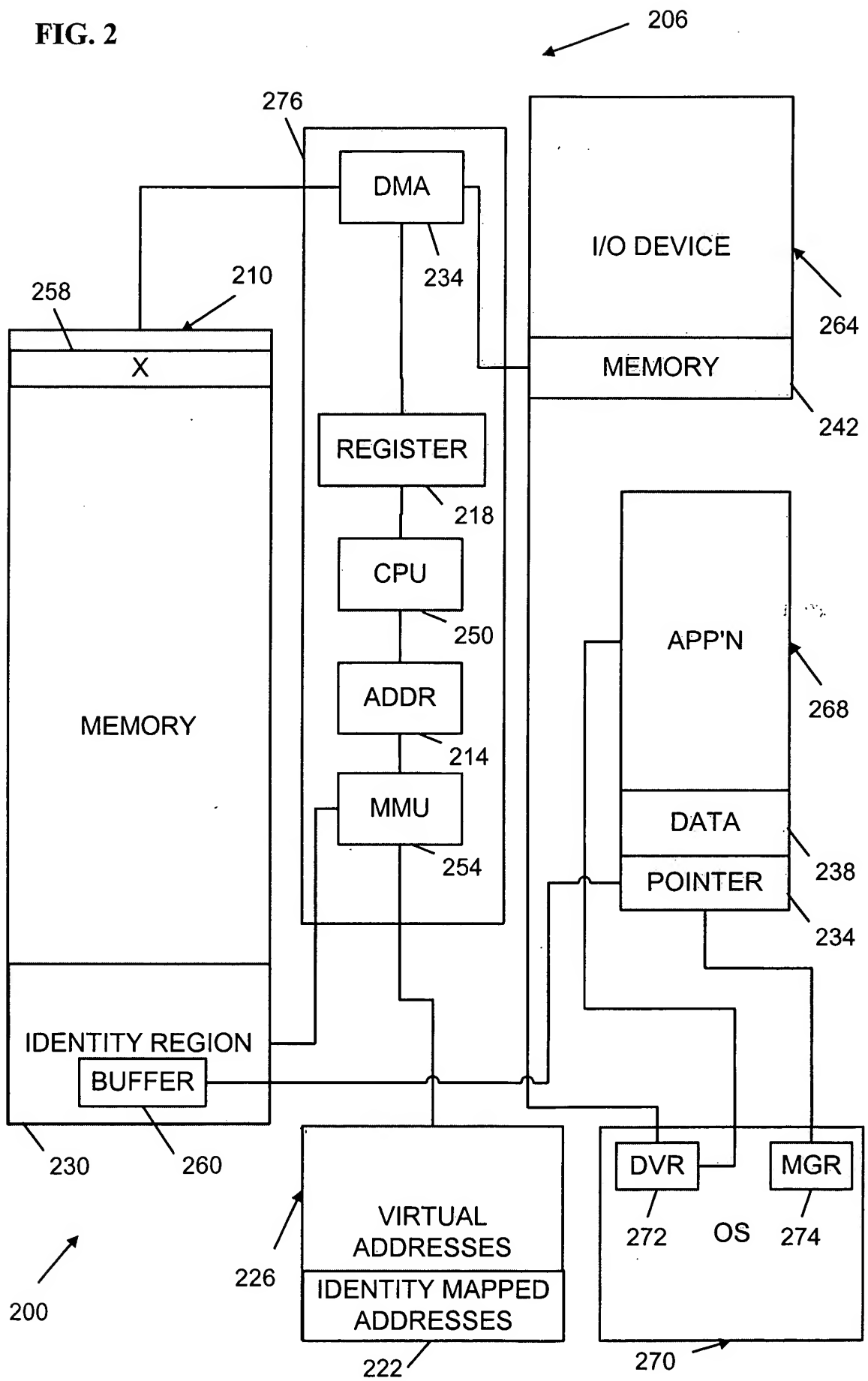


FIG. 3

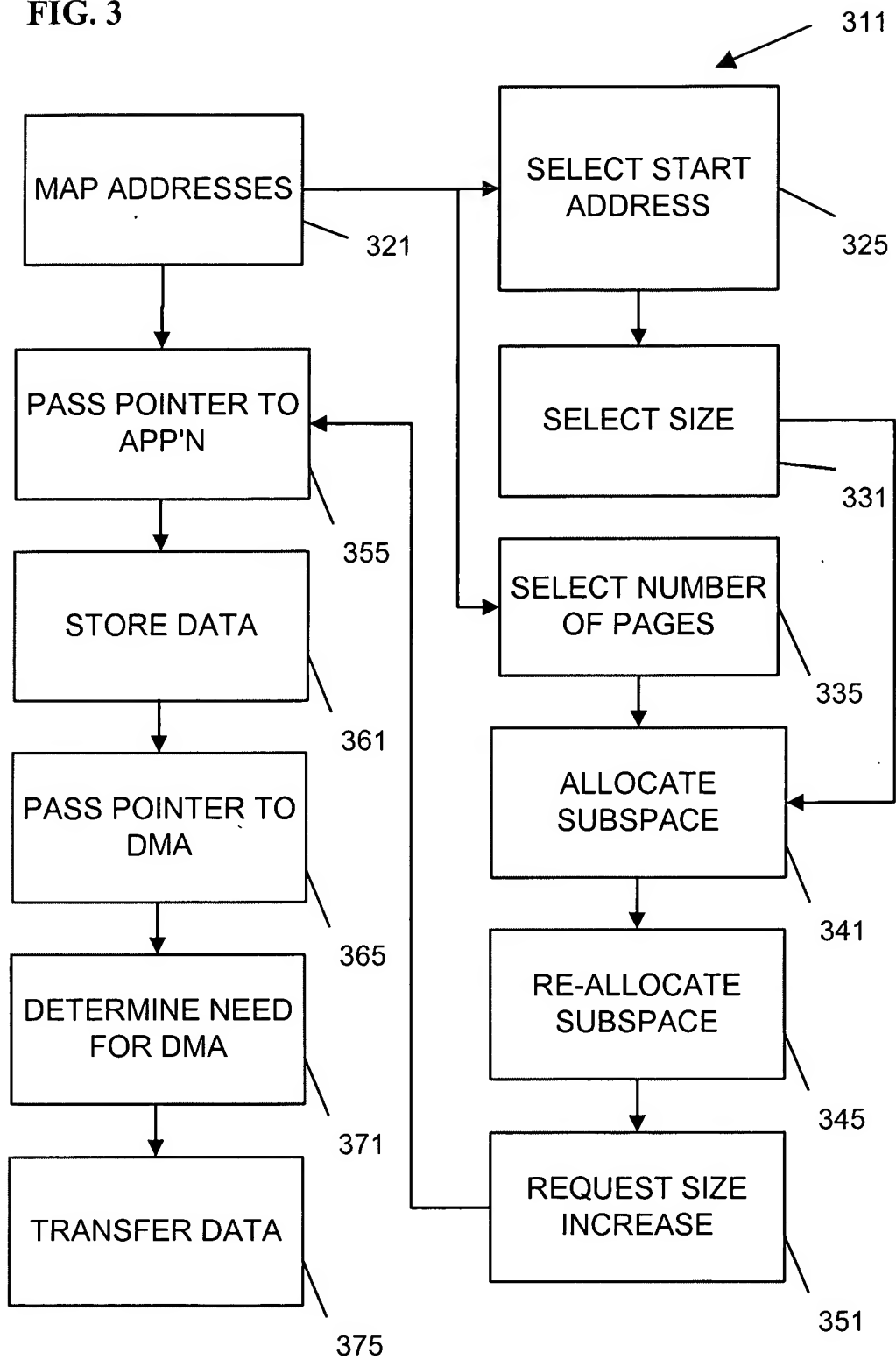


FIG. 4

